

ROUTING AND TRANSMITTAL SLIP		Date
TO: (Name, office symbol, room number, building, Agency/Post)		Initials Date
1.	<i>Paul</i>	<i>PK</i>
2.	<i>Jerry</i>	<i>PK</i>
3.	<i>Paul</i>	<i>PK</i>
4.		
5.		

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

*OC Briefing presented to D/L 8/22/84*

*John G. [Signature]*

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FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
	Phone No.

5041-102

SECRET

PROGRAM DEFINITION

- MAJOR REALIGNMENT AND UPGRADE OF ALL TELECOMMUNICATIONS SERVICES AT HEADQUARTERS
  - NEW BUILDING
  - OLD BUILDING

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PROJECTS

- NON-SECURE TELEPHONE
- SECURE TELEPHONE
- INTRA-BUILDING DISTRIBUTION
- INTER-BUILDING DISTRIBUTION
- TRANSMISSION SYSTEMS
- RF SHIELD
- COMMUNICATIONS OPERATIONS CENTER

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## INTRA-BUILDING DISTRIBUTION

- TELEPHONES
- DATA (TERMINALS, GRAPHICS, SECURITY SENSORS, IMAGERY, ETC.)
- VIDEO
- RESPONSIVE TO USER NEEDS
  - "UNIVERSAL CONNECTIVITY"
  - EASE OF RELOCATION
  - EASE OF INSTALLATION
  - RELIABILITY, MAINTAINABILITY, AND AVAILABILITY
  - MIGRATION PATH TO FUTURE APPLICATIONS

## TRANSMISSION SYSTEMS

- UPGRADE AND RECONFIGURE LEASED FACILITIES
- IMPROVE SERVICE AND SURVIVABILITY
- REDUCE ANNUAL COST FOR LEASED TRANSMISSION SERVICES
- RECONFIGURE, IF NECESSARY, AGENCY OWNED TRANSMISSION FACILITIES
  - MICROWAVE RADIOS
  - 
  - VHF

STAT

## INTER-BUILDING DISTRIBUTION

- ° HATS AND LEASED SERVICES CURRENTLY PROVIDE CONNECTIVITY TO OUT-BUILDINGS
- ° NEW BUILDING WILL REQUIRE CONNECTIVITY FOR
  - NON-SECURE TELEPHONE
  - SECURE TELEPHONE
  - DATA
  - VIDEO

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## COMMUNICATIONS OPERATIONS CENTER

- ° RELOCATE EXISTING COC
- ° INTEGRATE NEW SYSTEMS (MERCURY & MHF)
- ° REASONS FOR RELOCATION
  - OVER CROWDING
  - UNABLE TO EXPAND
  - CABLE ACCESS BLOCKED
  - EFFICIENCY
  - VULNERABILITY

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## PROJECT PHASES

PHASE I - REQUIREMENTS DEVELOPMENT AND ANALYSIS  
EVALUATION OF ARCHITECTURAL ALTERNATIVES  
SELECTION OF RECOMMENDED ARCHITECTURE

PHASE II - SYSTEM DESIGN  
SPECIFICATION DEVELOPMENT  
RFP PREPARATION  
SOURCE SELECTION  
CONTRACT AWARD

PHASE III - SYSTEM ACQUISITION

PHASE IV - SITE PREPARATION  
INSTALLATION  
TRAINING  
ACCEPTANCE TESTING  
OPERATIONAL ACTIVITIES

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## RESULTS OF NON-SECURE AND SECURE TELEPHONE SYSTEM STUDY

- SYSTEMS WILL REMAIN SEPARATE (SECURITY)
- RECOMMENDED ALTERNATIVES
  - PROCURE NEW HARDWARE FOR SECURE SYSTEM & RE-UTILIZE EXISTING SECURE HARDWARE FOR NON-SECURE SYSTEM
  - PROCURE NEW HARDWARE FOR BOTH SYSTEMS
  - PROJECTED \$1 MILLION DIFFERENCE IN LIFE CYCLE COST
- RFP WILL INCLUDE BOTH ALTERNATIVES
- FINAL SELECTION WILL BE BASED ON EVALUATION OF PROPOSALS (COST, SCHEDULE, RISK, ETC.)

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LAN

LOCAL AREA NETWORK

o

INTRA-BUILDING COMMUNICATIONS PROJECT INCLUDES

COMMUNICATIONS ARCHITECTURE FOR

NEW BUILDING

RETROFIT FOR OLD BUILDING

GOALS:

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MULTIPLE PROTOCOLS

MULTIPLE HOST CONNECTIONS

MULTIPLE DEVICE CHARACTERISTICS

EASE OF RELOCATION

EASE OF INSTALLATION

EXTENDABILITY FOR 20 YEAR CYCLE

FAULT ISOLATION EASE

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## ARCHITECTURE CANDIDATES

### POINT TO POINT

TWISTED WIRE PAIR

COAXIAL CABLE

FIBER OPTICS

### PBX

TWISTED WIRE PAIR

FIBER OPTICS

### BUS, RING, STAR OR OTHER NETWORK

TWISTED WIRE PAIR

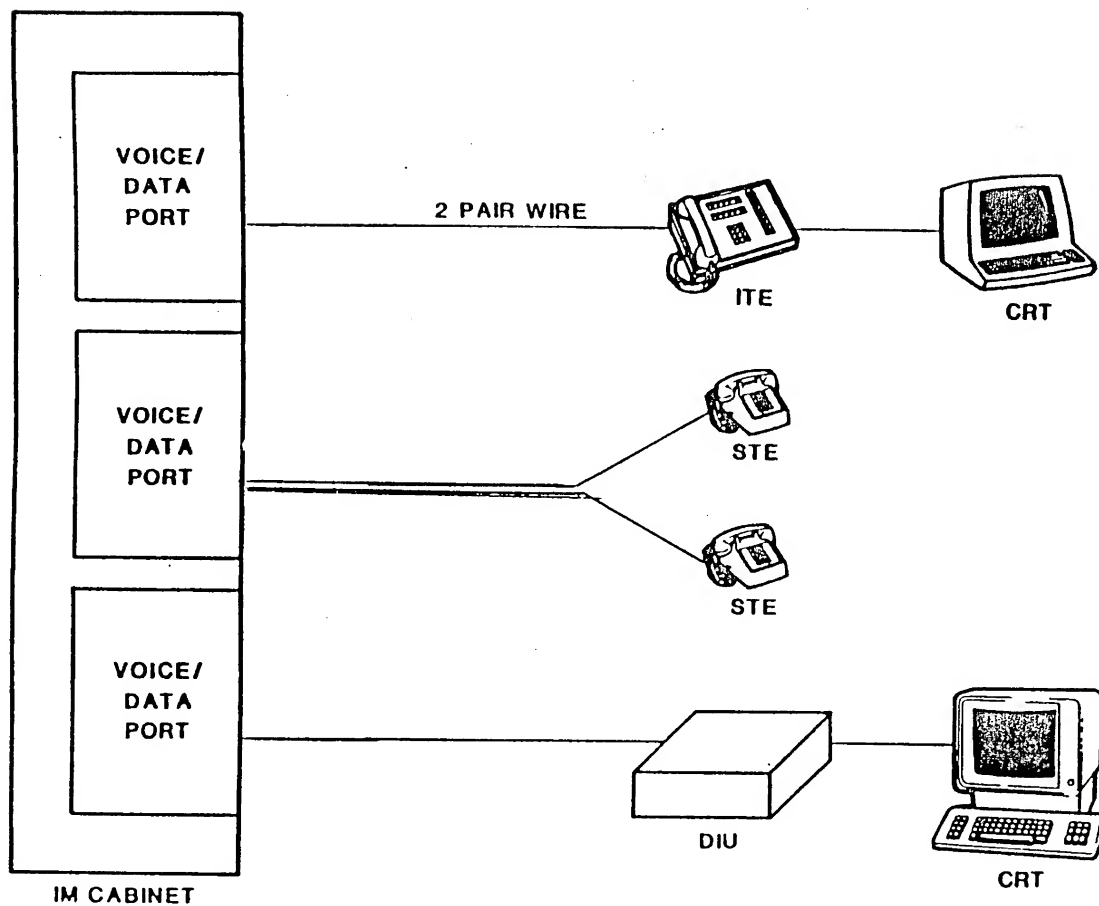
COAXIAL CABLE

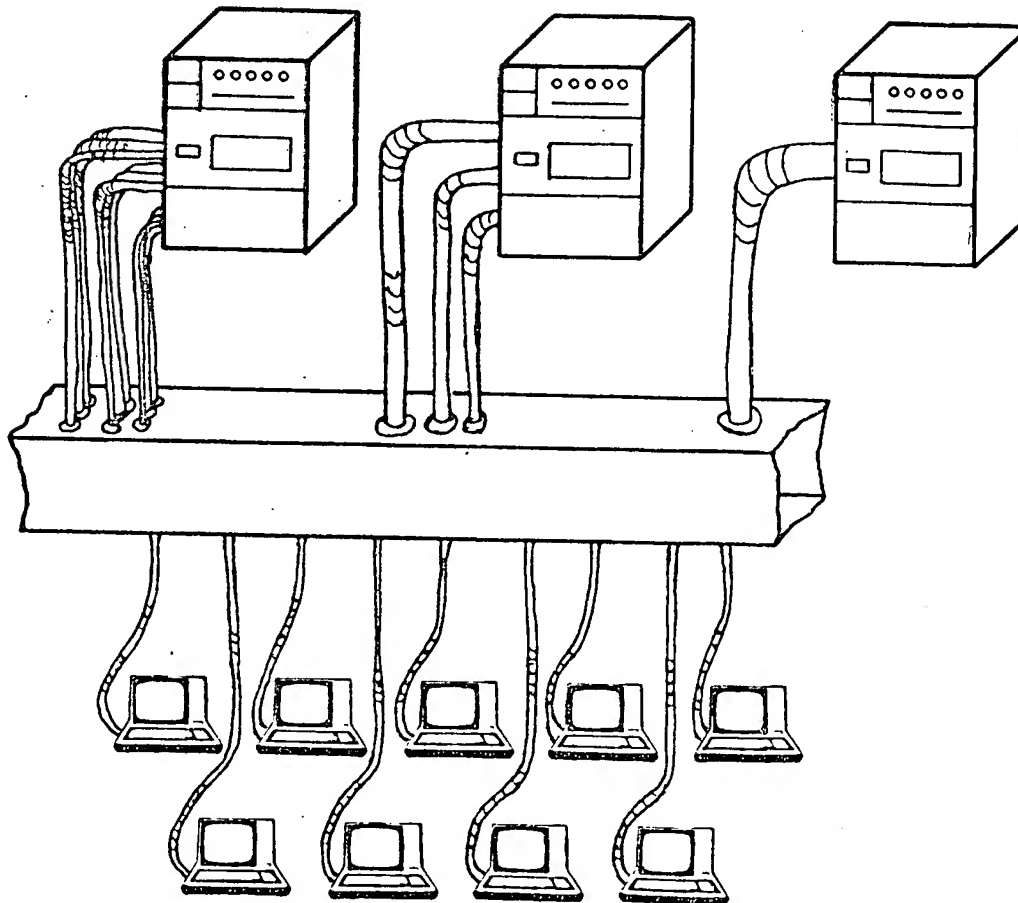
FIBER OPTICS

### SOME INTEGRATION OF THE ABOVE



## VOICE/DATA PORTS





## PROGRAM STRATEGY

1987

USE DIGITAL PBX FOR VOICE AND DATA

INSTALL A FIBER OPTIC WIRING SCHEME PRODUCT ALONG WITH  
THE PHONE WIRES

INSTALL A VIDEO DISTRIBUTION SCHEME USING FIBER AS THE MEDIA

1988 - 1990

DEVELOP AND RELEASE RFP FOR FIBER LAN (FY-86)

TRANSITION HIGH SPEED REQUIREMENTS TO FIBER LAN

INTEGRATE LAN - PBX SUCH THAT DEVICES ON ONE CAN INTERCONNECT  
AND BE MANAGED WITH DEVICES ON THE OTHER

ADD TO THE VIDEO, PBX, LAN CAPABILITIES AS THE PRODUCTS ARE  
ENHANCED OR AS REQUIREMENTS DEVELOP

## ARCHITECTURE

PBX FOR PHONES/DATA  
FIBER WIRING SCHEME  
FIBER BASED LAN  
VIDEO DISTRIBUTION SCHEME

## MEETS

SECURE VOICE  
EXISTING TERMINAL BASE  
PLANNED TERMINAL BASE  
FACSIMILE TRANSMISSION  
CLUSTERED ARCHITECTURES  
FILE SERVER ARCHITECTURES  
WORD PROCESSOR ARCHITECTURES  
GRAPHICS WORK STATIONS  
VIDEO TRANSMISSION

## FEATURES

### STATION FEATURES

ABBREVIATED DIALING  
ACCOUNT CODES  
ALPHA-NUMERIC DISPLAY  
AUTHORIZATION CODES  
AUTOMATIC DIALING  
AUTOMATIC LINE PRE-SELECT  
BUSY OVERRIDE  
BUSY RECALL (CALL BACK)  
BUZZ/STATION STATUS  
CALL CONTROL (CLASS MARK)  
CALL FORWARDING  
- ALL CALLS  
- BUSY/NO ANSWER  
CALL HOLD CONSULTATION  
CALL PARK  
CALL PICK-UP  
CALL STATUS LAMPS  
CALL WAITING  
CONFERENCING  
DIRECT TRUNK TERMINATION  
DIAL INTERCOM  
DO NOT DISTURB  
GROUP LISTENING  
HOLD/HOLD EXCLUSIVE  
HOTLINE  
LAST NUMBER REDIAL  
IA2 KEY SIMULATION  
PRIVACY RELEASE  
TRANSFER  
MULTIPLE APPEARANCE  
DIRECTORY LINES

### GENERAL FEATURES

MAXIMUM 16 MAN MACHINE CONSOLES  
MAXIMUM 6 DIRECTORY LOOK UP (DLS) TERMINALS  
ATTENDANT CONSOLE  
PRIMARY AND SECONDARY SYSTEM CONSOLES  
UNINTERRUPTIBLE POWER SUPPLY

### SYSTEM FEATURES

NUMBERING PLANS  
-FLEXIBLE STATION NUMBERING PLAN (3, 4 or 5 DIGITS)  
-NETWORK NUMBERING PLAN (ACCESS CODE + 7 DIGITS)  
-DIRECT DISTANCE DIALING ACCESS CODE + 10 DIGITS)  
-INTERNATIONAL DIALING  
-SATELLITE DIRECTORY NUMBERS (ACCESS CODE + 3, 4 or 5 DIGITS)  
-SPEED NUMBERS (ACCESS CODE + 3 or 4 DIGITS)  
DIRECT INWARD DIALING  
CLASS OF SERVICE OPTIONS (255 MAX)  
USER GROUP PARTITIONING (1000 MAX)  
UNIFORM ALTERNATE ROUTING  
CALL DETAIL REPORTING  
DIRECTORY LOOK-UP SYSTEM  
VOICE RESPONSE UNIT  
PAGING ACCESS OPTION  
MUSIC ON HOLD OPTION  
REMOTE MAINTENANCE AND ADMINISTRATION OPTION  
IMMEDIATE RING  
EXCEPTIONAL CALL DURATION ALARM

### DATA FEATURES

SYNCHRONOUS TRANSMISSION  
ASYNCHRONOUS TRANSMISSION  
DATA CALL ORIGINATION  
-VOICE INSTRUMENT  
-KEYBOARD  
-MACHINE  
DATA NUMBERING PLANS  
DATA FEATURES  
-ABBREVIATED DIALING  
-BUSY RECALL  
-DATA ALTERNATE ROUTING (UAR)  
-CALL PROGRESS MESSAGES  
-DATA CLASS OF SERVICE  
-DATA CALL DECALL RECORDING  
-ECHO SUPPRESSOR CONTROL  
-EXCEPTIONAL DATA CALL DURATION ALARM  
-RAILED DATA CONNECTION  
-HOTLINE SERVICE  
-QUEUEING  
-TERMINAL TYPE CHANGE  
-MODEM POOLING  
-IPCS (FORMAT AND PROTOCOL CONVERSION)  
--3270 IPC  
--WP IPC  
--X.25 IPC  
--PRI IPC  
-LANmark  
-LANmark 3270  
-LANmark ETHERNET

LAN ISSUES

SECURITY

NETWORK

EMANATIONS

OLD BUILDING RETROFIT

UNKNOWN FUTURE TECHNOLOGIES

SCHEDULE FOR CONSTRUCTION

CONFIGURATION CONTROL

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OTHER ISSUES

PERFORMANCE

FLEXIBILITY

RELIABILITY

MAINTAINABILITY

AVAILABILITY

FUNDING PROFILE

COST

SCHEDULE



SCHEDULE

RFI	MAY 1984
ARCHITECTURE DECISION	4 JUNE 1984
STRAWMAN DESIGN	29 JUNE 1984
BRIEF ODP	13 JULY 1984
BRIEF DIRECTORATES	19 JULY 1984
RFP DRAFT (LAN)	20 JULY 1984
RFP FINAL (LAN)	1 AUG 1984
ISSUE RFP	28 SEP 1984
RESPONSES	23 NOV 1984
AWARD	16 JAN 1985

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